



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,021	06/25/2004	Jixiong Dong	9896-023/NP	2768
27572 7590 12/04/2007 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER CHRISS, ANDREW W	
			ART UNIT 2619	PAPER NUMBER
			MAIL DATE 12/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/500,021	Applicant(s) DONG, JIXIONG	
	Examiner Andrew Chriss	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment and corresponding remarks, filed October 21, 2007, have been entered and considered. Claims 1, 3-5, 7, and 8 are amended, and Claims 1-11 are currently pending.
2. Applicant's amendment to the drawings has been entered. Objection to the drawings is withdrawn.
3. Applicant's amendment to Claim 7 has been entered. Objection to Claim 7 is withdrawn.
4. Applicant's amendment of Claim 3 has been entered. Rejection of Claim 3 under 35 U.S.C. 112, second paragraph, is withdrawn.
5. In light of the newly added claim limitations in independent Claim 8, rejection of Claims 8-10 under 35 U.S.C. 102(b) as being anticipated by Mochizuki is withdrawn. Additionally, Claims 9 (dependent on Claim 8) and 11 (dependent on Claim 9) under 35 U.S.C. 103(a) as being unpatentable over Mochizuki in view of Chapman is withdrawn.

Information Disclosure Statement

6. The information disclosure statement filed 10/16/2007 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each

document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

7. **Claim 8** objected to because of the following informalities: Claim language "minimum protection *unites*" should read "minimum protection *units*." Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claim 8** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is a lack of antecedent basis in the claim language for "the optical port."

Claim Rejections - 35 USC § 102

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
11. **Claims 1 and 5-7** rejected under 35 U.S.C. 102(b) as being anticipated by Chapman (United States Patent 5,974,027).

Regarding Claim 1, Chapman teaches a channel switching protection method for a Synchronous Digital Hierarchy (SDH) fiber network. Chapman teaches a network of nodes (Figure 1), wherein each node supports multiple working channels (column 1, line 64), thus dividing the optical port into multiple minimum protection units. Chapman further teaches an automatic protection switch byte (APS) which can represent multiple values and is used to define a state of a channel (column 4, lines 1-2), thus dividing the minimum protection units of more than one protection channel in each optical port into different logic-systems to form more than one logic-system. Chapman also teaches APS values that denote the equivalent of Applicant's claimed working modes. Figure 1 shows a network in the absence of a fault condition, indicated by the APS value "1111" (column 1, table 1), thus a normal working mode. Figure 2 shows a network in which a node is assigned an APS value equivalent to a switching mode, since the working path input of Node 3 is patched to the protection ring output (Column 6, lines 1-10). Figure 3 shows a network in which a node is assigned an APS value equivalent to a bridging working mode, as the protection ring input of Node 4 is connected to the protection ring output (column 4, lines 11-20). Figure 5 shows a network in which a node is assigned an APS value equivalent to a passing working mode, as the protection ring input of Node 4 is connected to the working ring output (column 6, lines 28-32). Lastly, Chapman teaches a quiescent (dormant) state in which the protection ring is neither generated nor terminated (column 5, lines 58-62) and the APS byte is set to "1111," as described above. In an example where a link is broken and protection is needed, the value of the APS byte is modified, as described with regards any of Figures 2, 3, or 5, thus switching normal working mode of each node to one of the other three working modes when protection is needed.

Regarding Claim 5, Chapman teaches the protection channels and working paths are of Virtual Container (VC) type, such as a VC3 (column 3, lines 23-25). Further, Chapman teaches assigning one of multiple available values of an APS byte to denote status of the working and protection paths, thus mapping one or more than one of multiple VC3s into different logic-systems to form more than one logic system.

Regarding Claim 6, Chapman teaches in Table 1 that the APS byte values, which implement protection switching trigger conditions, also denote the types of traffic that will be let through while the protection condition is in place (e.g., "0010" denoting signal fail high priority traffic).

Regarding Claim 7, Chapman teaches prioritizing both high priority and low priority requests at a bridge controller within a switch from both a local and remote switch (multiple minimum protection units (column 5, lines 1-28), thereby adjusting and crossing services sent to a single minimum protection unit. As the request processing is based on time, this request is handled by the equivalent of a time-division cross-connect unit.

Claim Rejections - 35 USC § 103

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. **Claims 2-4** rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Applicant's admitted prior art.

Regarding Claim 2, Chapman teaches all of the limitations of Claim 1, as described above. However, Chapman does not teach switching being a multiplex section protection switching, a sub-network connection protection switching, or a channel protection switching. In the same field of endeavor, Applicant's admitted prior art cites an ITU-T proposal, where the "main protection methods of SDH fiber transmission network are channel protection, multiplex section protection, and sub-network connection protection." It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Applicant's admitted prior art with Chapman in order to compensate for line errors (e.g., loss of signal) by switching from a normal operating line to a protection line.

Regarding Claim 3, Chapman further teaches an APS byte which enables the creation of logic-systems for protection switching, as described with regards to Claim 1 above. Chapman also teaches a channel/path trace in which the status/configuration of nodes in the network are gathered (column 2, lines 3-7). As described above with regards to Claim 1, these channel/path trace values can denote working modes, switching modes, bridging modes, and passing modes. Lastly, Chapman teaches that the path trace results are transmitted along with the value of the APS byte to the denoted node (column 6, lines 4-10).

Regarding Claim 4, Chapman further teaches that the nodes respond to the APS byte that is sent out over the working and protection channels, for the switching (column 6, lines 4-10), bridging (column 6, lines 18-20), and passing pages (column 6, line 28-32).

14. **Claims 8-11** rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view of Mochizuki et al (United States Patent 6,122,249).

Regarding Claim 8, Chapman teaches a switch that divides a port into multiple minimum protection units and divides the minimum protection units of more than one protection channel into different logic-systems, as described with regards to Claim 1 above. However, Chapman does not teach the claimed paging analyzer, switching controller, or cross-connection panel. In the same field of endeavor, Mochizuki teaches an add-drop multiplexing apparatus for SONET and SDH fiber networks. Specifically, Mochizuki teaches a selector 16 that selects one of the low-order signals based on configuration data (format shown in Figure 6) provided by the path setters (column 7, lines 7-10), equivalent to the function performed by Applicant's claimed paging analyzer. Mochizuki also teaches a path controller 15, that writes path data onto holders 13 and 14 (column 7, lines 4-5), and on to a path setting unit 2e or 2w, which cross-connects lower-order signals (column 6, lines 32-34), thus performing functions equivalent to Applicant's claimed switching controller and cross-connection panel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the components taught in Mochizuki with the system taught in Chapman in order to provide an add-drop multiplexing functionality.

Regarding Claim 9, Chapman teaches the equivalents of normal working pages, passing pages, bridging pages, and switching pages as described with regards to Claim 1 above. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Chapman with Mochizuki in order to provide a structure in which a large proportion of the protection channel can be disconnected from the nodes being protected, and is thereby available for protecting other channels in the network.

Regarding Claim 10, the combination of Chapman and Mochizuki teaches all of the limitations of Claim 8, as described above. Chapman further teaches various working modes of the input-output connections, as shown in Figures 1, 2, 3, and 5 and described with regards to Claim 1 above.

Response to Arguments

15. Applicant's arguments filed October 21, 2007 with regards to rejection of Claims 1 and 5-7 under 35 U.S.C. 102(b) have been fully considered but they are not persuasive. **Regarding Claim 1**, Applicant argues that Chapman fails to disclose dividing the optical port into multiple protection units. Per MPEP 2106: "USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily). In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow)." As such, the claimed limitation "dividing the optical port into multiple minimum protection units" can be interpreted as dividing a single output of a network component into multiple channels or multiple paths. Chapman teaches a method of protection switching, wherein a connection between two nodes is split into multiple working and protection paths. The

term "path," as defined in Chapman's background art, is "associated with a communications link between a pair of nodes, wherever they are located in a network" (column 1, lines 14-16); thus, the term path is used to convey a logical connection between nodes. Further, the term "channel" is used to describe either a path or a section (column 1, lines 21-22). Accordingly, when given its broadest reasonable interpretation, the claimed limitation "dividing the optical port into multiple minimum protection units" is taught by the system disclosed in Chapman. Applicant further argues that Chapman fails to disclose the claimed "multiple logic-systems." Per MPEP 2106, when giving the claim language its broadest reasonable interpretation, a logic system can be interpreted as a node or a system of nodes that employ logic states to determine and communicate status of node operation. As shown in Table 1 in the Chapman reference, each node is capable of processing an automatic protection switch byte definition in a switch request which can alter the configuration of a switch. As such, each of the 4-bit patterns in Table 1 determines how a switch is to be configured. As each of the switches is capable of being configured according to these bit patterns, this effectively comprises a logic system. Applicant further argues that Chapman fails to disclose the claimed working modes. However, when interpreted in light of the specification, Chapman teaches the equivalent of Applicant's claimed working modes. Applicant's claimed working modes are indicative of which switch input is connected to which switch output. As described with regards to Claim 1 above, Chapman teaches equivalents of these working mode configurations. Specifically, Figure 1 shows the equivalent of a normal working mode, Figure 2 shows the equivalent of a switching working mode, Figure 3 shows the equivalent of the bridging working mode, and Figure 5 shows the equivalent of the passing working mode. Applicant argues that the cited figures in Chapman

represent steps to performing protection switching. However, the claimed “working mode” limitation can be broadly interpreted to define a state of a protection ring component. Therefore, Chapman teaches the claimed limitation, as described above. Lastly, Applicant argues that Chapman fails to disclose switching a normal working mode of each logic node to the other three working nodes. However, as described with regards to Claim 1, Chapman teaches a method of protection switching wherein a logic value is changed when protection is needed. Specifically, Chapman discloses an example where a link is broken and protection is needed, as is shown in Figures 2, 3, and 5 and described in the corresponding passages cited in rejection of Claim 1 above.

Regarding **Claims 5-7**, Applicant argues that neither Chapman nor Mochizuki, nor any combination thereof, disclose the limitation of Claim 1. However, Mochizuki is not cited in the grounds of rejection for Claim 1. Further, Chapman discloses all of the limitations of Claim 1, as described above. Therefore, rejection of Claims 1 and 5-7 under 35 U.S.C. 102(b) is maintained.

16. Applicant's arguments filed October 21, 2007 with regards to rejection of **Claims 2-4** under 35 U.S.C. 103(a) have been fully considered but they are not persuasive. Applicant argues that neither Chapman nor Mochizuki, nor any combination thereof, disclose the limitation of Claim 1. However, Mochizuki is not cited in the grounds of rejection for Claim 1. Further, Chapman discloses all of the limitations of Claim 1, as described above. Therefore, rejection of Claims 2-4 under 35 U.S.C. 103(a) is maintained.

17. Applicant's arguments with respect to **claims 8-11** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Chriss whose telephone number is 571-272-1774. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/500,021
Art Unit: 2619

Page 12

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Chriss
Examiner
Art Unit 2619

AC



CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600